

IN THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1- 28. (Canceled)

29. (New) Method for grinding exterior circumference of a rotating cylindrical roller, held at its ends, with a rotating grinding wheel, length of said roller being greater than width of said grinding wheel, comprising during grinding positioning at least one cushioned body against a portion of the exterior circumference of the roller opposite a portion of the exterior circumference of the roller contacted by the grinding wheel, the cushioned body being comprised of an elastic solid material or an elastic exterior skin filled with an elastic pressure medium.

30. (New) Method according to claim 29, wherein said rotating grinding wheel and said rotating roller are moved relative to one another in the longitudinal direction of said roller while said rotating grinding wheel is in contact with the exterior circumference of the rotating roller.

31. (New) Method according to claim 29, wherein said grinding wheel is a ceramic bound CBN grinding wheel and said grinding comprises rough grinding followed by finish grinding with said holding of the roller at its end being effected by a single chucking for both said grindings and said positioning of the cushioned body against the roller is at least during the finish grinding.

32. (New) Method according to claim 29, wherein the positioning of the cushioned body against the roller is elastically flexible.

33. (New) Method according to claim 1, wherein force applied to the roller by the cushioned body is adjustable.

34. (New) Method according to claim 24, wherein the cushioned body is not positioned against the roller until the grinding is begun.

35. (New) Method according to claim 29, wherein the positioning of cushioned body against the roller is pneumatic.

36. (New) Method according to claim 29, wherein the positioning of at least one of the cushioned bodies is fixed during the grinding.

37. (New) Method according to claim 29, wherein at least one of said cushioned bodies and said roller are moved relative to one another parallel to a longitudinal direction of said roller during the grinding.

38. (New) Method according to claim 37, wherein said at least one cushioned body is moved radially with respect to the roller.

39. (New) Method according to claim 29, wherein the cushioned body is conformable to the roller when the cylindrical body is positioned against the roller.

40. (New) Method according to claim 39, wherein the cushioned body comprises the elastic exterior skin and the elastic pressure medium is a gas.

41. (New) Method according to claim 29, further comprising feeding a liquid or gaseous lubricant to a location at which the cushioned body is positioned against the roller.

42. (New) Method according to claim 41, wherein the lubricant comprises at least one of grinding emulsions, synthetic coolants and grinding oils.

43. (New) Method according to claim 41, wherein the elastic pressure medium is the lubricant and the elastic exterior skin has apertures therethrough facing the roller and through which the lubricant flows.

44. (New) Method according to claim 29, wherein the cushioned body is moved away from the roller transversely of the roller axis thereby to permit the roller to be bent during the grinding, whereby the roller is shaped with a slightly concave/convex longitudinal curvature.

45. (New) Method according to claim 29, whereby force with which said at least one cushioned body is positioned against said roller is adjusted during the grinding.

46. (New) Method according to claim 29, wherein a plurality of said cushioned bodies are positioned against said roller and force with which each of said cushioned bodies is positioned against said roller is individually adjusted.

47. (New) Method according to claim 45 or 46, wherein said adjustments are dependent on the positions of the grinding wheel and/or said cushioned bodies along the axis of the roller.

48. (New) Apparatus for grinding exterior circumference of a rotating cylindrical roller held at its ends, with a rotating grinding wheel, length of said roller being greater than width of said grinding wheel, comprising tension and drive members for chucking the roller at end faces of the roller and for rotationally driving the roller, a first grinding spindle, a first grinding wheel rotationally driven by the first grinding spindle, means for driving the grinding wheel in a direction transverse to longitudinal axis of the roller so that the grinding wheel is positionable against the roller, means for driving at least one of the roller and the grinding wheel for relative displacement thereof in directions parallel to length of the roller, at least one cushioned body comprising an elastic solid material or an elastic exterior skin filled with an elastic pressure medium, and means for positioning said at least one cushioned body against a first portion of the exterior circumference of the roller opposite a second portion of the exterior circumference of the roller contacted by the grinding wheel.

49. (New) Apparatus according to claim 48, further comprising a control for setting force with which said at least one cushioned body is positioned against the roller.

50. (New) Apparatus according to claim 49, wherein the control is for individually setting force with which each of said at least one cushioned bodies are positioned against the roller.

51. (New) Apparatus according to claim 48, wherein said means for positioning said at least one cushioned body comprises at least one double-acting pneumatic cylinder including a piston rod to which said at least one cushioned body is attached.

52. (New) Apparatus according to claim 51, wherein said at least one cushioned body comprises a plurality of said cushioned bodies and said at least one double-acting pneumatic cylinder comprises a plurality of said double-acting cylinders and said control comprises a plurality of discrete pressure regulators, each of said pressure regulators being operatively connected to a respective one of said cylinders.

53. (New) Apparatus according to claim 48, wherein said cushion comprises said elastic exterior skin and said elastic pressure medium comprises compressed air.

54. (New) Apparatus according to claim 48, further comprising feed lines for lubricant, the feed lines opening at a location approximately where the cushioned body is positioned against the roller.

55. (New) Apparatus according to claim 54, wherein the feed lines pass through said at least one cushioned body directly to said location.

56. (New) Apparatus according to claim 55, wherein said cushion comprises said elastic exterior skin and said feed lines are integral with said skin, whereby said lubricant is separated from said elastic pressure medium.

57. Apparatus according to claim 53, wherein said elastic exterior skin has apertures at a location approximately where the cushioned body is positioned against the roller and the compressed air discharges through said apertures thereby to function as a lubricant.

58. (New) Apparatus according to claim 48, further comprising a second grinding spindle, a grinding headstock supporting said first and second grinding spindles and wherein the first grinding wheel is a CBN grinding wheel for rough grinding, and the apparatus also comprising a second CBN grinding wheel for finish grinding, the second grinding wheel being rotationally driven by the second

grinding spindle, and an automatic coupling for activating the means for positioning the cushioned body against said first portion of the exterior circumference of the roller when said second grinding wheel is brought into a work position to grind the roller.